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GENERAL AVIATION STATISTICAL DATABOOK

1988 Edition

FOREWORD

THE GENERAL AVIATION STATISTICAL DATABOOK has become a helpful tool to those examining our industry.

The 1988 DATABOOK now has information on hours flown by general aviation, by primary use, as well as data on the average age of the general aviation fleet, by type of aircraft.

Information on airports and pilot population will be of special interest to users since other publications offering this data are not available this year from traditional sources.

We hope you'll keep your DATABOOK handy as a quick reference for all your questions on general aviation.

The General Aviation Manufacturers Association (GAMA) is a national trade association proudly representing 34 American manufacturers of the finest General Aviation aircraft, engines, avionics, instruments, related equipment and components. In addition to building nearly all the General Aviation aircraft flying in the United States today, GAMA member companies also operate aircraft fleets, airport fixed-base operations, pilot schools and training facilities across the nation.

Headquartered in Washington, DC, GAMA represents the interests of its members before the United States Congress, the Department of Transportation, the Federal Aviation Administration and other federal and state government agencies directly concerned with the air transportation system. It also maintains close working relationships with other associations representing various facets of the aviation community. Through its public information and education programs, GAMA promotes better understanding of the air transportation environment and the important role General Aviation plays in the national economy and serving America's transportation needs.

For more information on General Aviation, chartering or buying an aircraft, learning to fly, or joining one of the many aviation organizations serving the community, call or write the GAMA communications office. We are happy to guide you.

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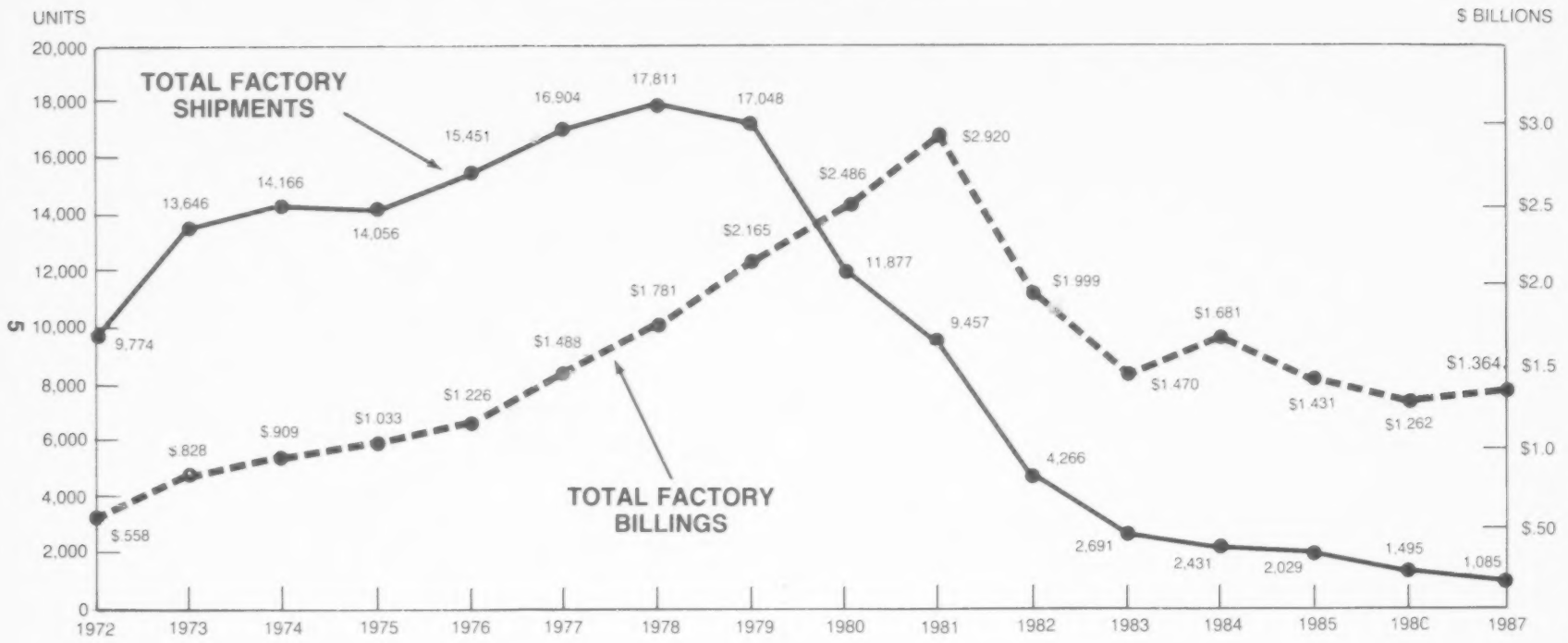
SHIPMENT STATISTICS

Annual Shipments of New U.S. General Aviation Aircraft by Units Shipped, Number of Companies Reporting, and Factory Net Billings

Year	Units Shipped	Companies Reporting	Factory Net Billings (Millions)
1946	35,000	—	$ 110.0
1947	15,594	15	57.9
1948	7,037	12	32.4
1949	3,405	11	17.7
1950	3,386	13	19.1
1951	2,302	12	16.8
1952	3,058	8	26.8
1953	3,788	7	34.4
1954	3,071	7	43.4
1955	4,434	7	68.2
1956	6,738	8	103.7
1957	6,118	9	99.6
1958	6,414	10	101.9
1959	7,689	9	129.8
1960	7,588	8	151.2
1961	6,778	8	124.3
1962	6,697	7	136.8
1963	7,569	7	153.4
1964	9,336	8	198.8
1965	11,852	8	318.2
1966	15,768	10	444.9
1967	13,577	14	359.6
1968	13,698	14	425.7
1969	12,457	14	584.5
1970	7,292	13	337.0
1971	7,466	11	321.5
1972	9,774	12	557.6
1973	13,646	12	828.1
1974	14,166	12	909.4
1975	14,056	12	1,032.9
1976	15,451	12	1,225.5
1977	16,904	12	1,488.1
1978	17,811	12	1,781.2
1979	17,048	12	2,165.0
1980	11,877	12	2,486.2
1981	9,457	12	2,919.9
1982	4,266	11	1,999.5
1983	2,691	10	1,469.5
1984	2,431	9	1,680.7
1985	2,029	9	1,430.6
1986	1,495	9	1,261.9
1987	1,085	9	1,363.5

Source: GAMA

GAMA General Aviation Unit Shipments/Billings



. . . AND BILLINGS

GAMA General Aviation Aircraft Shipments by Type of Aircraft

Year	Total	Single Engine	Multi-Engine	Total Piston	Turboprop	Jet	Total Turbine
1962	6,697	5,690	1,007	6,697	-0-	-0-	-0-
1963	7,569	6,248	1,321	7,569	-0-	-0-	-0-
1964	9,336	7,718	1,606	9,324	9	3	12
1965	11,852	9,873	1,780	11,653	87	112	199
1966	15,768	13,250	2,192	15,442	165	161	326
1967	13,577	11,557	1,773	13,330	149	98	247
1968	13,698	11,398	1,959	13,357	248	93	341
1969	12,457	10,054	2,078	12,132	214	111	325
1970	7,292	5,942	1,159	7,101	135	56	191
1971	7,466	6,287	1,043	7,330	89	47	136
1972	9,774	7,913	1,548	9,446	179	134	313
1973	13,646	10,788	2,413	13,193	247	198	445
1974	14,166	11,579	2,135	13,697	250	202	452
1975	14,056	11,441	2,116	13,555	305	194	499
1976	15,451	12,785	2,120	14,905	359	187	546
1977	16,904	14,054	2,195	16,249	428	227	655
1978	17,811	14,398	2,634	17,032	548	231	779
1979	17,048	13,286	2,843	16,129	639	282	921
1980	11,877	8,640	2,116	10,756	778	326	1,104
1981	9,457	6,608	1,542	8,150	918	389	1,307
1982	4,266	2,871	678	3,549	458	259	717
1983	2,691	1,811	417	2,228	321	142	463
1984	2,431	1,620	371	1,991	271	169	440
1985	2,029	1,370	193	1,563	321	145	466
1986	1,495	985	138	1,123	250	122	372
1987	1,085	613	87	700	263	122	385

Source: GAMA

Estimated Value of GAMA General Aviation Aircraft Shipments By Type of Aircraft (In millions)

Year	Single Engine	Multi-Engine	Total Piston	Turboprop	Jet	Total Turbine
1975	$290	$280	$ 570	$ 180	$ 281	$ 461
1976	376	320	696	238	293	531
1977	473	390	863	296	329	625
1978	516	493	1,009	394	378	772
1979	523	555	1,078	548	540	1,088
1980	391	403	794	875	816	1,691
1981	327	348	675	1,120	1,125	2,245
1982	200	220	420	590	990	1,580
1983	145	115	260	460	750	1,210
1984	147	133	280	436	966	1,402
1985	126	68	194	524	713	1,237
1986	80	43	123	430	709	1,139
1987	80	18	98	477	789	1,266

Source: GAMA

GAMA General Aviation Aircraft Shipments by Year and Quarter

YEAR	Quarter I	Quarter II	Quarter III	Quarter IV
1962	1,782	1,744	1,329	1,842
1963	1,806	2,000	1,625	2,138
1964	2,156	2,503	1,934	2,743
1965	2,642	3,008	2,859	3,343
*1966	3,855	4,266	3,881	3,585
*1967	3,392	3,480	2,801	3,811
*1968	3,661	3,545	3,282	3,068
*1969	3,297	3,592	2,825	2,693
*1970	1,929	2,099	1,749	1,500
*1971	1,771	1,902	1,903	1,770
1972	2,157	2,564	2,417	2,636
1973	3,246	3,555	3,442	3,403
1974	3,493	3,576	3,488	3,609
1975	3,777	3,562	3,291	3,426
1976	3,949	4,159	3,479	3,864
1977	4,124	4,513	3,985	4,282
1978	4,176	4,621	4,672	4,342
1979	4,259	4,602	4,426	3,761
1980	3,512	2,756	2,796	2,813
1981	2,389	2,631	2,529	1,908
1982	1,390	1,126	890	860
1983	659	709	717	606
1984	523	563	681	664
1985	455	519	581	474
1986	285	364	393	453
1987	227	330	239	289

*Quarterly figures do not sum to annual because some manufacturers reported annual shipments only.

Source: GAMA

GAMA General Aviation Aircraft Exports

Year	Units Exported	% of Total Production	Factory Net Billings (Millions)	% of Total Dollars
1965	2,325	19.6%	$ 61.2	19.2%
1966	2,903	18.4%	75.4	16.9%
1967	3,035	22.4%	76.5	21.3%
1968	2,803	20.5%	91.5	21.5%
1969	2,623	21.1%	107.1	18.3%
1970	2,170	29.8%	98.9	29.3%
1971	1,854	24.8%	95.6	29.7%
1972	2,254	23.1%	137.9	24.7%
1973	3,530	25.9%	230.2	27.8%
1974	4,248	30.0%	287.5	31.6%
1975	3,512	25.0%	308.1	29.8%
1976	3,539	22.9%	331.2	27.0%
1977	3,611	21.4%	354.5	23.8%
1978	3,612	20.3%	486.7	27.3%
1979	3,995	23.4%	600.9	27.8%
1980	3,555	29.9%	756.4	30.4%
1981	2,270	24.0%	749.0	25.7%
1982	1,162	27.2%	650.2	32.5%
1983	513	19.1%	316.5	21.5%
1984	334	13.7%	260.7	15.5%
1985	354	17.4%	230.0	16.1%
1986	441	29.5%	343.6	27.2%
1987	439	40.5%	469.3	34.4%

Source: GAMA

GAMA General Aviation Aircraft Exports by Type

Year	Single Engine	Multi-Engine	Turboprop	Turbojet
1972	1715	455	55	29
1973	2674	732	58	66
1974	3371	732	75	70
1975	2680	644	122	66
1976	2704	669	114	52
1977	2835	594	126	56
1978	2712	652	166	82
1979	2942	774	181	98
1980	2565	635	245	110
1981	1546	363	259	102
1982	718	227	135	82
1983	298	119	66	30
1984	199	79	25	31
1985	208	69	49	28
1986	272	69	68	32
1987	252	60	78	49

Source: GAMA

U.S. GENERAL AVIATION FLEET AND FLIGHT ACTIVITY

THE FLEET BY TYPE AND USE . . .

Number of Active General Aviation Aircraft in 1986 By Type and Primary Use

Aircraft Type	Active GA Aircraft	Executive	Business	Personal	Instructional	Aerial Application	Aerial Observation	Other Work	Commuter Air Carrier	Air Taxi	Other	Inactive
Total All Aircraft	220,044	12,075	43,780	120,308	15,812	7,068	4,716	1,274	1,721	7,568	5,707	48,574
Piston—Total	195,646	4,842	42,030	113,844	14,608	6,104	3,428	792	826	5,145	4,012	41,604
One-Engine	171,777	1,773	32,920	107,967	13,573	5,861	2,938	775	389	2,215	3,364	36,828
Two-Engine	23,721	3,069	9,111	5,864	1,035	126	490	17	430	2,930	637	4,562
Other Piston	148	0	0	13	0	117	0	0	6	0	11	214
Turboprop—Total	5,964	3,094	819	135	2	101	29	21	795	532	437	668
Two-Engine	5,779	3,092	815	134	2	21	24	21	733	530	407	551
Other Turboprop	185	3	4	1	0	80	4	0	62	1	30	117
Turbojet—Total	4,480	3,119	270	252	0	0	8	0	3	510	318	481
Two-Engine	4,037	2,897	258	66	0	0	8	0	3	510	294	252
Other Turbojet	444	222	11	186	0	0	0	0	0	0	24	228
Rotocraft—Total	6,943	1,010	644	713	496	858	969	145	97	1,381	631	3,522
Piston	2,921	32	292	609	338	708	602	38	4	36	263	2,645
Turbine	4,022	978	352	104	158	150	367	107	93	1,345	368	877
Other—Total	7,010	9	18	5,364	707	5	283	316	0	0	309	2,299

Source: FAA

NOTE: Row and column summation may differ from printed totals due to estimation procedures, or because some active aircraft did not report use.

General Aviation Hours Flown by Aircraft Type and Primary Use 1986 (Thousands of Hours)

Aircraft Type	Total Hours	Executive	Business	Personal	Instructional	Aerial Application	Aerial Observation	Other Work	Commuter Carrier	Air Taxi	Other
Total All Aircraft	34,416	3,781	5,896	10,097	4,677	1,985	1,620	323	2,185	2,913	939
Piston—Total	26,861	1,175	5,529	9,725	4,476	1,698	1,140	241	720	1,708	449
One-Engine	21,939	360	3,982	9,142	4,167	1,674	1,037	235	295	709	337
Two-Engine	4,911	815	1,547	582	309	20	103	6	420	999	111
Other Piston	11	0	0	2	0	4	0	0	5	0	0
Turboprop—Total	2,812	1,022	169	39	0	39	10	5	1,332	204	60
Two-Engine	2,797	1,021	169	39	0	3	9	5	1,293	203	55
Other Turboprop	85	1	0	0	0	37	1	0	40	1	6
Turbojet—Total	1,654	1,227	98	11	0	0	2	0	0	198	117
Two-Engine	1,566	1,148	94	9	0	0	2	0	0	198	115
Other Turbojet	88	80	4	2	0	0	0	0	0	0	2
Rotorcraft—Total	2,625	356	99	38	140	247	450	64	133	803	296
Piston	804	2	27	30	88	223	266	4	1	14	149
Turbine	1,821	354	71	9	53	24	184	59	132	789	146
Other—Total	394	0	1	283	61	0	18	13	0	0	17

Source: FAA

NOTE: Row and column summations may differ because of independent rounding or because some active aircraft did not report use.

. . . AND BY AGE

Average Age of the Registered, U.S. General Aviation Fleet in 1987

Aircraft Type	Mean Age-Years
Single Engine Piston	20.9
Multi Engine Piston	18.3
Turboprop	11.1
Turbojet	12.3
All General Aviation	20.1

. . . AND BY GEOGRAPHIC AREA

U.S. Active General Aviation Aircraft by Region and State

	1986	1985	1984	1983	1982		1986	1985	1984	1983	1982
ALASKAN	**7,557**	**6,421**	**7,684**	**6,075**	**6,924**	**NORTHWEST MOUNTAIN**	**22,004**	**20,901**	**24,502**	**22,064**	**22,530**
Alaska	7,557	6,421	7,684	6,075	6,294	Colorado	4,273	4,606	5,180	4,407	4,982
						Idaho	2,274	1,839	2,328	2,146	2,376
CENTRAL	**13,085**	**12,377**	**13,331**	**12,720**	**13,069**	Montana	2,368	1,890	2,472	2,538	2,193
Iowa	2,683	2,800	3,416	3,165	3,455	Oregon	4,543	4,622	5,032	4,689	4,789
Kansas	4,033	3,855	3,713	4,519	3,534	Utah	1,284	1,106	1,337	1,440	1,196
Missouri	4,192	3,934	4,396	3,858	4,540	Washington	6,160	5,740	6,665	5,645	5,532
Nebraska	2,177	1,788	1,805	1,178	1,539	Wyoming	1,101	1,098	1,474	1,192	1,462
EASTERN	**25,487**	**22,585**	**24,297**	**24,006**	**23,226**	**SOUTHERN**	**33,642**	**32,430**	**34,007**	**34,356**	**32,604**
Delaware	932	530	533	809	586	Alabama	2,673	2,608	3,234	2,594	2,628
District of Columbia	21	50	31	58	152	Florida	12,882	12,340	12,720	12,688	12,297
Maryland	2,709	2,654	2,870	3,116	2,646	Georgia	4,517	4,588	4,450	4,955	4,997
New Jersey	4,291	3,741	4,041	4,021	3,858	Kentucky	1,738	1,635	1,802	1,752	1,525
New York	6,772	6,164	6,599	6,045	6,118	Mississippi	2,060	2,139	2,082	2,706	2,252
Pennsylvania	6,405	5,705	6,205	6,174	6,313	North Carolina	4,386	4,544	4,412	4,344	3,740
Virginia	3,225	2,741	3,137	2,554	2,327	Puerto Rico	352	233	422	362	251
West Virginia	1,132	1,000	880	1,229	1,227	South Carolina	1,787	1,700	1,661	1,686	1,766
						Tennessee	3,145	2,643	2,884	2,935	2,924
GREAT LAKES	**37,838**	**37,417**	**39,788**	**38,072**	**37,825**						
Illinois	7,603	7,155	9,087	7,700	7,983	**SOUTHWEST**	**32,669**	**32,414**	**35,341**	**35,478**	**34,690**
Indiana	4,212	4,139	3,797	4,207	3,074	Arkansas	2,514	2,687	2,920	2,977	2,994
Michigan	7,060	7,511	7,066	7,079	7,065	Louisiana	3,746	3,674	4,627	3,972	3,742
Minnesota	4,507	4,350	5,139	4,733	4,493	New Mexico	2,302	1 942	2,300	2,387	2,323
North Dakota	1,615	1,655	1,572	1,734	1,705	Oklahoma	4,147	4,234	5,345	5,634	5,440
Ohio	7,283	7,686	7,553	7,478	8,162	Texas	19,961	19,877	19,941	20,414	20,000
South Dakota	1,378	1,227	1,393	1,360	1,360						
Wisconsin	4,180	3,694	4,180	3,782	3,983	**WESTERN-PACIFIC**	**38,764**	**36,481**	**38,414**	**36,820**	**35,146**
						Arizona	5,787	4,796	5,177	4,737	4,679
NEW ENGLAND	**8,952**	**8,016**	**8,393**	**8,025**	**7,861**	California	30,387	29,392	30,494	29,236	27,848
Connecticut	1,992	1,724	1,863	1,426	1,798	Hawaii	366	348	463	381	426
Maine	1,320	1,039	1,055	1,263	1,109	Nevada	2,219	1,945	1,823	2,288	2,018
Massachusetts	3,248	2,994	3,316	2,737	2,959						
New Hampshire	1,443	1,363	1,298	1,430	1,197	**Other U.S. Territories**	**107**	**174**	**76**	**188**	**72**
Rhode Island	560	220	396	510	266						
Vermont	388	676	466	660	532	**Grand Total**	**220,043**	**210,654**	**220,943**	**213,293**	**209,779**

Column totals may differ from printed totals due to estimation procedures.

Source: FAA

FLIGHT HOURS BY TYPE . . .

Estimated Hours Flown in General Aviation by Type of Aircraft
(in Thousands of Hours)

As of December 31	Total	Fixed Wing			Rotocraft		Balloons Dirigibles Gliders
		Piston	Turboprop	Turbojet	Piston	Turbine	
1977	35,791	30,965	1,549	1,165	609	1,259	245
1978	39,409	34,043	1,606	1,194	806	1,421	338
1979	43,340	37,303	1,871	1,259	892	1,664	353
1980	41,016	34,747	2,240	1,332	736	1,603	359
1981	40,704	34,086	2,155	1,387	930	1,754	391
1982	36,457	29,950	2,168	1,611	579	1,771	379
1983	35,249	28,911	2,173	1,473	572	1,700	420
1984	36,119	29,194	2,506	1,566	592	1,903	358
1985	34,063	27,793	2,080	1,622	564	1,590	414
1986	34,416	26,861	2,882	1,654	804	1,821	394

Note: Columns may not add due to rounding and estimation procedures.

Source: FAA

. . . AND PER AIRCRAFT

Active U.S. General Aviation Aircraft and Average Hours Annually Flown Per Aircraft, by Type

	Estimated Active Aircraft					Average Hours/Aircraft/Yr.				
	1986	1985	1984	1983	1982	1986	1985	1984	1983	1982
TOTAL AIRCRAFT	**220,044**	**210,654**	**220,943**	**213,293**	**209,779**	**149**	**158**	**158**	**164**	**174**
Piston Total	**195,646**	**188,191**	**197,442**	**191,480**	**189,195**	**135**	**147**	**147**	**151**	**160**
Single engine	**171,777**	**164,385**	**171,922**	**166,427**	**164,173**	**128**	**140**	**138**	**139**	**149**
1–3 seats	62,427	58,829	61,989	59,199	57,670	125	135	139	140	146
4 + seats	109,351	105,555	109,933	107,228	106,503	130	142	137	139	151
Multi-engine	**23,721**	**23,659**	**25,258**	**24,910**	**24,882**	**204**	**208**	**218**	**231**	**231**
1–6 seats	16,166	15,627	16,539	16,249	16,381	172	174	181	187	187
7 + seats	7,555	8,032	8,719	8,660	8,501	280	274	303	318	317
Other Piston	148	148	262	143	140	111	184	433	240	247
Turboprop Total	**5,964**	**5,407**	**5,809**	**5,453**	**5,186**	**423**	**362**	**414**	**389**	**396**
Twin Engine										
1–12 seats	4,809	4,633	4,992	4,733	4,427	335	319	342	301	356
13 + seats	970	607	640	578	610	1,013	831	1,112	139	853
Other Turboprop	185	167	176	142	149	499	397	[illegible]	579	394
Turbojet Total	**4,480**	**4,375**	**4,320**	**3,898**	**3,996**	**354**	**369**	**354**	**382**	**404**
Twin Engine	4,037	3,914	3,780	3,447	3,309	385	375	349	392	407
Other	444	460	540	451	687	154	325	393	274	385
Rotocraft Total	**6,943**	**6,418**	**7,096**	**6,540**	**6,169**	**380**	**336**	**344**	**350**	**383**
Piston	2,921	2,877	2,936	2,541	2,419	273	192	187	221	237
Turbine	4,022	3,541	4,160	3,998	3,749	460	460	469	432	474
Other	**7,010**	**6,263**	**6,275**	**5,923**	**5,233**	**56**	**67**	**56**	**71**	**72**

Source: FAA

PILOTS

Active U.S. Pilot and Non-Pilot Certificates Held
(as of December 31, year indicated)

Category	1974	1975	1976	1977	1978	1979	1980[1]	1981	1982	1983	1984	1985	1986	1987
Pilot—total	**733,728**	**728,187**	**744,246**	**783,932**	**798,833**	**814,667**	**827,071**	**764,182**	**733,255**	**718,004**	**722,376**	**709,540**	**709,118**	**699,653**
Student	180,795	176,978	188,801	203,510	204,874	210,180	199,833	179,912	156,361	147,197	150,081	146,652	150,273	146,016
Private	305,848	305,863	309,005	327,424	337,644	343,276	357,479	328,562	322,094	318,643	320,086	311,086	305,736	300,949
Commercial	192,425	189,342	187,801	188,763	185,833	182,097	183,442	168,580	165,093	159,495	155,929	151,632	147,798	143,645
Airline transport	41,002	42,592	45,072	50,149	55,881	63,652	69,569	70,311	73,471	75,938	79,192	82,740	87,186	91,287
Helicopter (only)	5,647	4,932	4,804	4,819	4,874	5,218	6,030	6,453	7,034	7,237	7,532	8,123	8,122	8,702
Glider (only)[2]	4,824	5,348	5,789	6,208	6,541	6,796	7,039	7,388	7,842	8,157	8,390	8,168	8,411	7,901
Lighter-than-air[2]	3,187	3,132	2,974	3,059	3,186	3,448	3,679	2,976	1,360	1,337	1,166	1,139	1,133	1,153
Nonpilot—total[r]	**314,394**	**323,934**	**334,681**	**348,584**	**362,350**	**377,213**	**393,486**	**398,368**	**420,595**	**432,890**	**447,462**	**412,741**	**410,079**	**427,962**
Mechanic[3]	198,863	205,436	212,303	220,768	228,743	237,611	250,157	262,705	277,436	288,355	298,028	274,100	284,241	297,178
Parachute rigger[3]	7,900	8,327	8,718	8,994	9,200	9,831	9,547	9,716	9,893	10,074	10,194	9,395	9,535	9,659
Ground instructor[3]	49,249	51,365	53,464	55,717	57,738	59,680	61,550	63,246	65,004	66,385	67,463	58,214	59,443	60,861
Dispatcher[3]	5,576	5,741	5,838	5,972	6,161	6,446	6,799	7,094	7,580	8,223	8,980	8,511	9,025	9,491
Flight navigator	2,509	2,321	2,214	2,155	2,092	1,994	1,936	1,785	1,695	1,636	1,603	1,542	1,512	1,145
Flight engineer	26,955	26,788	27,560	29,871	33,028	36,869	38,367	38,294	38,053	38,546	40,534	43,377	46,323	49,328
Flight instructor certificates[4]	42,418	44,777	46,236	49,362	52,201	54,398	60,440	57,523	62,492	62,201	61,173	58,940	57,355	60,316
Instrument Ratings[5]	199,323	203,954	211,364	226,334	236,312	247,096	260,461	252,535	255,073	254,271	256,584	258,559	258,845	266,122

Source: FAA

[1]For 1980 only, a valid medical certificate was defined as one that was issued within the last 27 months.

[2]Glider and lighter-than-air pilots are not required to have a medical examination; however, the totals above represent pilots who received a medical examination within the last 25 months.

[3]Numbers represent all certificates on record. No medical examination required.

[4]Not included in the total.

[5]Special ratings shown on pilot certificates which do not indicate additional certificates.

[r]Revised.

Estimated Active Pilots and Flight Instructors by FAA Region and State (December 31, 1987)

FAA Region and State	Total Pilots	Students	Private	Commercial	Airline Transport	Misc.[2]	Flight Instructor[3]
Total[1]	**699,653**	**146,016**	**300,949**	**143,645**	**91,287**	**17,756**	**60,316**
United States—Total	**680,767**	**142,831**	**297,733**	**137,929**	**85,022**	**17,252**	**59,423**
Alaskan Region—Total	**10,685**	**1,993**	**5,013**	**2,586**	**962**	**131**	**798**
Central—Total	**35,584**	**6,312**	**18,187**	**7,312**	**3,226**	**547**	**3,100**
Iowa	7,619	1,371	4,323	1,414	423	88	634
Kansas	9,799	1,491	5,124	2,135	905	144	871
Missouri	12,781	2,492	5,973	2,490	1,580	246	1,196
Nebraska	5,385	958	2,767	1,273	318	69	399
Eastern—Total	**91,723**	**21,912**	**37,768**	**17,857**	**11,165**	**3,021**	**8,595**
Delaware	1,643	353	674	354	232	30	190
District of Columbia	666	156	281	137	55	37	51
Maryland	10,037	2,266	4,417	1,948	1,108	298	896
New Jersey	14,921	3,507	5,966	2,684	2,279	485	1,411
New York	25,688	6,596	10,866	4,854	2,284	1,088	2,293
Pennsylvania	20,861	5,124	8,938	3,618	2,596	585	2,130
Virginia	15,374	3,241	5,430	3,825	2,432	446	1,405
West Virginia	2,533	669	1,196	437	179	52	219
Great Lakes—Total	**116,254**	**24,838**	**56,665**	**21,219**	**11,560**	**1,972**	**10,331**
Illinois	27,229	6,036	12,411	4,788	3,528	466	2,522
Indiana	12,479	2,766	6,237	2,327	960	189	1,145
Michigan	20,348	4,510	10,172	3,500	1,683	477	1,751
Minnesota	16,188	3,095	7,8[illegible]	2,910	2,199	174	1,344
North Dakota	3,293	692	1,5[illegible]7	888	93	23	255
Ohio	22,565	4,940	11,029	4,170	1,947	479	2,154
South Dakota	2,582	448	1,308	622	167	37	207
Wisconsin	11,570	2,351	6,101	2,014	977	127	953
New England—Total	**34,175**	**8,565**	**14,413**	**5,885**	**4,402**	**910**	**2,768**
Connecticut	9,204	2,133	3,511	1,579	1,747	234	750
Maine	3,917	909	1,816	809	337	46	294
Massachusetts	12,813	3,537	5,745	2,040	1,098	393	1,021
New Hampshire	4,729	1,100	1,754	853	889	133	419
Rhode Island	1,671	422	762	291	150	46	123
Vermont	1,841	464	825	313	181	58	161
N.W. Mountain—Total	**65,664**	**13,138**	**28,745**	**13,225**	**8,698**	**1,858**	**5,980**
Colorado	18,202	4,262	6,622	3,417	3,100	801	1,904
Idaho	4,150	660	2,076	983	355	76	366
Montana	4,063	687	2,101	934	296	45	371
Oregon	9,801	1,758	5,215	1,989	622	217	802
Utah	5,610	1,252	2,513	982	703	160	457
Washington	21,686	4,114	9,069	4,504	3,469	530	1,906
Wyoming	2,152	405	1,149	416	153	29	174
Southern—Total	**116,661**	**24,634**	**45,591**	**25,634**	**17,764**	**3,038**	**10,097**
Alabama	9,271	1,824	3,539	2,360	659	889	955
Florida	45,095	8,883	17,691	10,445	7,311	765	3,871
Georgia	18,047	3,620	6,361	3,751	4,006	309	1,422
Kentucky	5,848	1,412	2,561	1,007	695	173	518
Mississippi	4,789	1,031	1,900	1,425	348	85	363
North Carolina	14,784	3,573	6,032	2,855	1,910	414	1,199
South Carolina	6,916	1,634	2,833	1,613	690	146	597
Tennessee	11,911	2,657	4,674	2,178	2,145	257	1,172
Southwest—Total	**85,537**	**16,719**	**36,131**	**18,958**	**11,800**	**1,929**	**7,667**
Arkansas	6,266	1,370	2,817	1 584	413	82	529
Louisiana	8,694	1,699	3,501	2,323	876	295	777
New Mexico	5,233	1,139	2,276	1,162	447	209	429
Oklahoma	12,004	2,508	5,927	2,504	882	183	957
Texas	53,340	10,003	21,610	11,385	9,182	1,160	4,975
Western-Pacific—Total	**124,484**	**24,720**	**55,220**	**25,253**	**15,445**	**3,846**	**10,087**
Arizona	15,445	3,194	6,661	3,209	1,849	532	1,408
California	100,102	19,662	45,541	20,043	11,916	2,940	7,870
Hawaii	3,373	842	834	803	664	230	271
Nevada	5,564	1,022	2,184	1,198	1,016	144	538
Outside U.S.—Total[4]	**15,886**	**3,185**	**3,216**	**5,716**	**6,265**	**504**	**893**
Other U.S. Areas	**1,935**	**581**	**648**	**336**	**331**	**39**	**0**
American Samoa	10	1	2	1	6	0	0
Canal Zone	2	1	0	1	0	0	0
Guam	102	20	22	19	40	1	0
Puerto Rico	1,493	495	506	236	223	33	0
Virgin Islands	325	63	118	78	61	5	0
Wake Island	3	1	0	1	1	0	0

Source: FAA

[1]Includes Outside U.S.
[2]Includes helicopter, glider, and lighter-than-air.
[3]Not included in total.
[4]Outside U.S. includes Other U.S. Areas outside of the 50 states and foreign countries.

U.S. Student Pilot Certificates Processed by Month and Year

Month	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total	**121,543**	**131,384**	**113,997**	**127,424**	**129,280**	**138,816**	**137,032**	**139,956**	**102,301**	**117,962**	**86,731**	**94,981**	**91,395**	**87,004**	**88,126**	**86,011**
January	7,515	7,608	8,200	9,794	11,853	10,247	7,385	12,926	10,462	9,179	7,289	6,726	8,248	7,151	6,068	5,968
February	7,936	8,622	6,195	7,506	6,396	8,010	8,253	10,585	7,835	8,568	6,499	4,859	7,353	4,907	5,097	5,284
March	10,176	9,963	7,661	9,445	10,921	11,921	11,234	9,525	7,872	9,718	6,857	6,893	6,228	6,406	6,254	6,734
April	10,445	10,513	7,690	8,654	10,835	9,871	10,646	9,968	7,775	7,036	5,372	7,304	6,660	6,466	6,540	6,860
May	10,495	10,712	10,013	10,204	10,749	10,286	11,032	9,919	8,510	8,387	5,053	7,667	6,446	6,026	6,085	6,649
June	11,174	12,242	10,970	9,865	10,322	11,573	11,490	9,308	8,577	8,885	6,632	5,811	7,082	5,727	5,763	6,611
July	10,366	13,473	10,261	12,339	12,300	11,372	10,544	13,266	6,941	8,387	6,416	5,330	8,015	6,638	7,429	7,432
August	15,007	14,643	12,431	12,471	12,930	15,262	13,839	16,920	10,590	8,363	8,536	10,407	9,821	8,292	8,544	7,767
September	10,850	11,568	10,320	13,587	12,320	13,987	11,904	12,051	9,936	10,713	8,850	11,913	7,833	8,674	11,862	10,374
October	10,962	11,715	10,863	11,979	8,864	11,678	15,548	11,926	9,186	14,327	8,254	11,214	7,851	11,601	9,597	9,519
November	10,298	12,385	9,770	11,681	12,292	15,114	13,096	12,928	7,052	12,424	8,407	8,529	7,390	8,138	8,070	6,708
December	6,319	7,940	9,353	9,899	9,498	9,495	12,061	6,634	7,565	11,975	8,211	8,328	8,432	6,978	6,817	6,105

Source: FAA

Estimated Total and Instrument Rated Pilots: December 31, 1976–87

Calendar Year	Total Pilots[1]	Instrument Rated Pilots	
		Number	Percent of Total
1987	553,637	266,122	48
1986	558,845	262,388	47
1985	562,888	258,559	46
1984	572,295	256,584	45
1983	570,807	254,271	45
1982	576,894	255,073	44
1981	584,270	252,535	43
1980	627,238	260,461	42
1979	604,487	247,096	41
1978	593,959	236,312	40
1977	580,422	226,334	39
1976	555,625	211,364	38

Source: FAA

[1]Excludes student pilots.

Estimated Instrument Ratings Held By Class of Certificates: December 31, 1987 and 1986

Class of Certificates	1987	1986	Percent Change 1987–1986
Total—All Groups	**266,122**	**262,388**	**1**
Private Pilots—Total	**47,746**	**45,672**	**5**
Private Airplane (only)	43,885	41,947	5
Private Airplane, Private Glider	983	955	3
Private Airplane, Commercial Glider	102	95	7
Private Airplane, Private Helicopter	332	318	4
Private Airplane, Private Glider, Private Helicopter	25	20	-25
Private Airplane, Commercial Helicopter	2,385	2,302	4
Private Airplane, Private Gyroplane	3	2	50
Private Airplane, Private Glider, Commercial Helicopter	21	20	5
Private Airplane, Commercial Glider, Commercial Helicopter	9	12	25
Private Airplane, Other	1	1	0
Commercial Pilots—Total	**121,072**	**123,559**	**-2**
Commercial Airplane (only)	102,017	103,913	-2
Commercial Airplane, Private Glider	1,756	1,825	-4
Commercial Airplane, Commercial Glider	3,098	3,227	-4
Commercial Airplane, Private Helicopter	234	224	4
Commercial Airplane, Commercial Helicopter	13,250	13,624	-3
Commercial Airplane, Private Glider, Commercial Helicopter	134	143	-6
Commercial Airplane, Commercial Glider, Commercial Helicopter	526	549	-4
Commercial Airplane, Commercial Gyroplane	15	13	15
Commercial Airplane, Commercial Helicopter, Commercial Gyroplane	15	16	-6
Commercial Airplane, Commercial Gyroplane, Commercial Glider	1	1	0
Commercial Airplane, Commercial Glider, Private Helicopter	16	15	7
Commercial Airplane, Commercial Gyroplane, Commercial Helicopter, Commercial Glider	10	9	11
Airline Transport Pilots—Total	**91,287**	**87,186**	**5**
Airline Transport Airplane	89,694	85,714	5
Airline Transport Airplane, Airline Transport Helicopter	1,593	1,472	8
Rotorcraft Pilots—Total	**6,017**	**5,971**	**1**
Commercial Helicopter	5,927	5,873	1
Airline Transport Helicopter	81	89	9
Rotorcraft Other	9	9	0

Source: FAA

Estimated Active Women Pilot and Nonpilot Certificates Held (as of December 31, year indicated)

Category of Certificates Held	1972	1973	1974	1975	1976	1977	1978	1979	1980[1]	1981	1982	1983	1984	1985	1986	1987
Pilot—total	**33,001**	**34,356**	**36,943**	**37,934**	**41,643**	**47,294**	**49,874**	**51,733**	**52,902**	**47,721**	**45,305**	**43,648**	**44,339**	**43,483**	**43,082**	**42,578**
Student	17,053	18,593	19,298	19,600	22,254	25,705	26,354	26,714	26,006	22,591	19,958	18,696	19,435	19,058	18,899	18,367
Private	13,391	13,232	14,465	14,952	15,838	17,702	19,267	20,275	21,554	19,602	19,388	18,801	18,616	17,974	17,532	17,349
Commercial	2,196	2,083	2,596	2,733	2,857	3,090	3,306	3,618	3,993	4,101	4,257	4,281	4,232	4,185	4,176	4,208
Airline transport	101	95	116	137	160	193	270	361	480	584	749	884	1,032	1,184	1,334	1,538
Helicopter (only)	10	7	5	11	17	18	17	27	55	87	113	144	167	196	232	247
Glider (only)[2]	201	216	271	301	352	391	433	461	496	540	574	599	631	653	667	627
Lighter-than-air[2]	49	130	192	200	165	195	227	277	318	216	266	243	226	233	242	242
Nonpilot—total	**3,038**	**2,621**	**2,998**	**3,171**	**3,378**	**3,672**	**3,984**	**4,350**	**4,779**	**5,201**	**5,697**	**6,151**	**6,591**	**6,017**	**6,502**	**7,101**
Mechanic[3]	349	284	315	360	422	505	600	695	890	1,051	1,298	1,493	1,649	1,775	1,964	2,237
Parachute rigger[3]	483	336	495	504	516	535	544	553	562	580	593	605	614	412	414	428
Ground instructor[3]	2,166	1,960	2,139	2,249	2,369	2,525	2,682	2,852	3,015	3,213	3,391	3,554	3,680	2,980	3,087	3,232
Dispatcher[3]	40	39	42	50	55	65	76	105	141	167	199	249	310	394	460	524
Flight engineer	0	2	7	8	16	42	82	145	171	189	215	248	336	455	577	680
Flight Navigator	0	0	0	0	0	0	0	0	0	1	1	2	2	1	0	0
Flight instructor[4]	664	618	834	945	1,054	1,238	1,458	1,699	2,079	2,165	2,532	2,685	2,736	2,731	2,687	2,909

Source: FAA

NOTE: Instrument ratings not reported.

[1]For 1980 only, a valid medical certificate was defined as one that was issued within the last 27 months.

[2]Glider and lighter-than-air pilots are not required to have a medical examination; however, the totals above represent pilots who received a medical examination within the last 25 months.

[3]Numbers represent all certificates on record. No medical examination required.

[4]Not included in total.

AIRPORTS AND AERONAUTICAL FACILITIES

U.S. Civil and Joint-Use Airports, Heliports, Stolports, and Seaplane Bases on Record by Type of Ownership December 31, 1987

FAA Region and State	Total Facilities	Total Facilities, By Ownership		Paved Airports[1]		Unpaved Airports[1]		Total Airports[1]
		Public	Private	Lighted	Not Lighted	Lighted	Not Lighted	Public Use
Total	**17,015**	**4,984**	**12,031**	**3,491**	**342**	**470**	**1,082**	**5,385**
United States—total*	**16,949**	**4,936**	**12,013**	**3,469**	**337**	**470**	**1,069**	**5,345**
Alaska—total	**593**	**397**	**196**	**38**	**3**	**69**	**210**	**320**
Central—total	**1,437**	**475**	**962**	**381**	**17**	**71**	**79**	**548**
Iowa	277	122	155	94	3	34	15	146
Kansas	389	132	257	101	7	19	24	151
Missouri	440	126	314	112	5	9	20	146
Nebraska	331	95	236	74	2	9	20	105
Eastern—total	**2,175**	**337**	**1,838**	**334**	**25**	**59**	**110**	**528**
Delaware	35	4	31	5	0	4	1	10
District of Columbia	15	7	8	2	0	0	0	2
Maryland	154	21	133	28	3	3	8	42
New Jersey	317	41	276	37	3	4	8	52
New York	507	84	423	81	11	25	42	159
Pennsylvania	744	78	666	90	5	20	33	148
Virginia	308	74	234	63	2	2	8	75
West Virginia	95	28	67	28	1	1	10	40
Great Lakes—total	**4,135**	**891**	**3,244**	**712**	**26**	**173**	**192**	**1,103**
Illinois	913	110	803	90	1	21	8	120
Indiana	530	86	444	77	3	10	21	111
Michigan	431	134	297	116	10	32	55	213
Minnesota	477	147	330	97	1	33	19	150
North Dakota	487	99	388	65	5	17	17	104
Ohio	716	134	582	122	3	25	36	186
South Dakota	158	75	83	48	2	19	6	75
Wisconsin	423	106	317	97	1	16	30	144
New England—total	**568**	**138**	**430**	**116**	**18**	**3**	**40**	**177**
Connecticut	120	16	104	19	0	1	4	24
Maine	144	45	99	29	7	1	18	55
Massachusetts	158	33	125	36	5	0	5	46
New Hampshire	62	15	47	16	2	1	7	26
Rhode Island	22	9	13	7	0	0	0	7
Vermont	62	20	42	9	4	0	6	19

*United States total excludes Puerto Rico, Virgin Islands, N. Mariana Islands, and South Pacific.
[1]Among all airports open to the public, either privately or publicly owned.

(Continued from page 20)

FAA Region and State	Total Facilities	By Ownership		Paved Airports[1]		Unpaved Airports[1]		Total Airports[1]
		Public	Private	Lighted	Not Lighted	Lighted	Not Lighted	Public Use
Northwest Mountain—total	**1,737**	**677**	**1,060**	**376**	**62**	**36**	**173**	**647**
Colorado	333	96	237	59	9	6	10	84
Idaho	207	128	79	41	11	0	62	114
Montana	210	121	89	64	10	12	37	123
Oregon	366	99	267	56	18	6	24	104
Utah	109	57	52	39	4	1	6	50
Washington	408	127	281	84	8	10	25	127
Wyoming	104	49	55	33	2	1	9	45
Southern—total	**2,165**	**784**	**1,381**	**618**	**64**	**34**	**92**	**808**
Alabama	193	100	93	85	9	4	5	103
Florida	607	138	469	93	9	8	18	128
Georgia	334	129	205	99	11	4	4	118
Kentucky	139	68	71	52	9	0	11	72
Mississippi	194	86	108	70	12	3	8	93
North Carolina	316	95	221	81	5	8	33	127
Puerto Rico	27	14	13	9	2	0	0	11
South Carolina	146	65	81	54	2	6	10	72
Tennessee	201	83	118	73	5	1	3	82
Virgin Islands	8	6	2	2	0	0	0	2
Southwest—total	**2,818**	**767**	**2,051**	**619**	**57**	**21**	**110**	**807**
Arkansas	173	89	84	76	13	0	8	97
Louisiana	381	95	286	65	5	1	10	81
New Mexico	174	75	99	47	5	0	17	69
Oklahoma	403	163	240	113	10	10	28	161
Texas	1,687	345	1,342	318	24	10	47	399
Western—total	**1,387**	**518**	**869**	**297**	**70**	**4**	**76**	**447**
Arizona	265	92	173	50	6	0	21	77
California	909	316	593	203	51	2	13	269
Hawaii	54	18	36	10	3	0	0	13
Nevada	128	64	64	23	7	2	29	61
South Pacific**	31	28	3	11	3	0	13	27

*Excludes Puerto Rico, Virgin Islands, N. Mariana Islands, and South Pacific.

**American Samoa, Guam, and Trust Territories.

[1]Among all airports open to the public, either publicly or privately owned.

Source: FAA

FAA Air Route Facilities and Services: 1972 through 1986

December 31,	VOR VORTAC	Nondirectional Beacons	Air Route Traffic Control Centers	Airport Traffic Control Towers	Flight Service Stations	International Flight Service Stations	Instrument Landing Systems	Airport Surveillance Radar
1972	991	706	27	355	324	7	403	125
1973	995	739	27	403	315	7	467	142
1974	1,000	793	27	417	320	7	490	156
1975	1,011	848	26	487	321	7	580	177
1976	1,020	920	25	488	321	7	640	175
1977	1,021	959	25	495	319	7	678	182
1978	1,020	988	25	494	319	6	698	185
1979	1,028	1,015	25	499	318	6	753	192
1980	1,037	1,055	25	502	317	6	796	192
1981	1,033	1,123	25	501	316	6	840	199
1982	1,029	1,143	25	492	316	6	884	197
1983	1,032	1,183	25	494	316	5	934	197
1984	1,035	1,211	25	497	310	5	955	197
1985	1,039	1,222	25	500	302	4	968	198
1986	1,043[a]	1,239[b]	25[c]	686[d]	293	3	977[e]	312[f]

[a]Includes 72 nonfederal and 38 military.

[b]Includes 875 nonfederal and 66 military.

[c]Includes 3 military combined center/radar approach control facilities (CERAP).

[d]Includes 56 nonfederal and 210 military.

[e]Includes 17 Landing Directional Aid (LDA), 114 nonfederal, 19 military, 171 partial, 7 ISMLS, and 36 SDF.

[f]Includes FAA, military and nonfederal.

Source: FAA

FORECASTS AND OTHER INFORMATION

Estimated Active General Aviation Aircraft
(Thousands)

As of December 31	Fixed Wing				Rotorcraft		Other	Total
	Piston							
	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine		
Historical								
1979	168.4	25.1	3.5	2.7	3.1	2.7	4.8	210.3
1980	168.4	24.6	4.1	3.0	2.8	3.2	4.9	211.0
1981	167.9	25.5	4.7	3.2	3.3	3.7	5.0	213.3
1982	164.2	25.0	5.2	4.0	2.4	3.7	5.2	209.7
1983	166.4	25.1	5.5	3.9	2.5	4.0	5.9	213.3
1984	171.9	25.5	5.8	4.3	2.9	4.2	6.3	220.9
1985	164.4	23.8	5.4	4.4	2.9	3.5	6.3	210.7
1986E	171.8	23.9	6.0	4.5	2.9	4.0	7.0	220.0
Forecast								
1987	170.2	23.8	6.1	4.6	2.8	4.2	7.3	219.0
1988	168.6	23.7	6.6	4.9	2.7	4.4	7.6	218.5
1989	167.0	23.5	6.4	5.1	2.6	4.6	7.9	217.1
1990	166.3	23.4	6.6	5.3	2.5	4.8	8.2	217.1
1991	165.5	23.3	6.7	5.6	2.5	5.0	8.5	217.1
1992	164.8	23.3	7.1	5.9	2.5	5.3	8.9	217.8
1993	164.3	23.4	7.4	6.2	2.4	5.6	9.2	218.5
1994	163.8	23.5	7.7	6.4	2.4	5.9	9.5	219.2
1995	163.3	23.6	7.9	6.6	2.3	6.1	9.6	219.4
1996	163.0	23.7	8.1	6.8	2.2	6.3	9.8	219.9
1997	162.8	23.8	8.3	7.0	2.1	6.5	9.9	220.4
1998	162.5	23.9	8.5	7.2	2.0	6.7	10.1	220.9

Source: FAA

Notes: Detail may not add to total because of independent rounding.

An active aircraft must have a current registration and it must have been flown at least one hour during the previous calendar year.

Forecast Active Pilots by Type of Certificate
(Thousands)

As of December 31	Student	Private	Commercial	Airline Transport	Helicopter	Glider	Lighter-Than-Air	Total	Instrument Rated[1]
Forecast									
1987	153.3	306.0	147.8	90.7	8.7	8.5	1.2	716.2	266.3
1988	156.4	306.6	148.5	94.3	8.8	8.6	1.2	724.4	269.0
1989	159.1	307.5	149.3	97.1	8.9	8.8	1.2	731.9	271.7
1990	161.5	308.2	150.8	100.1	9.0	8.9	1.2	739.7	273.6
1991	163.5	308.8	152.3	103.1	9.1	9.0	1.2	747.0	275.5
1992	165.1	309.7	153.8	106.2	9.3	9.1	1.3	754.5	277.4
1993	166.3	310.6	155.3	108.3	9.4	9.2	1.4	760.5	279.4
1994	167.1	311.6	156.9	110.5	9.5	9.3	1.5	766.4	281.3
1995	167.8	312.5	158.5	112.7	9.6	9.4	1.6	772.1	283.3
1996	168.3	313.4	160.1	114.9	9.7	9.5	1.7	777.6	285.3
1997	168.8	314.4	161.7	117.2	9.8	9.6	1.8	783.3	287.3
1998	169.3	315.3	163.3	119.6	9.9	9.7	1.9	789.0	289.3

(1) Instrument rated pilots should not be added to other categories in deriving total.

Source: FAA

Notes: Detail may not add to total because of independent rounding.

FLIGHT HOURS FORECAST—

Forecast Hours Flown in General Aviation by Type of Aircraft
(Millions)

Fiscal Year	Fixed Wing				Rotocraft		Other	Total
	Piston							
	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine		
Historical								
1980	28.8	6.6	2.1	1.3	0.9	1.8	0.4	41.9
1981	27.9	6.4	2.2	1.5	0.8	1.8	0.4	41.0
1982	25.2	6.0	2.1	1.6	0.6	1.8	0.4	37.7
1983	23.8	5.8	2.2	1.5	0.6	1.7	0.4	36.0
1984	23.4	5.7	2.4	1.6	0.6	1.9	0.4	36.0
1985	23.4	5.7	2.6	1.8	0.6	1.7	0.4	36.2
1986	22.2	4.9	2.7	1.7	0.8	1.8	0.4	34.5
1987E	22.0	4.9	2.7	1.8	0.8	1.9	0.4	34.5
Forecast								
1988	21.8	4.8	2.8	1.9	0.8	1.9	0.4	34.4
1989	21.8	4.7	2.8	1.9	0.7	2.0	0.4	34.3
1990	21.7	4.7	2.8	2.0	0.7	2.2	0.4	34.5
1991	21.7	4.7	2.9	2.1	0.6	2.3	0.4	34.7
1992	21.6	4.7	2.9	2.2	0.6	2.5	0.4	34.9
1993	21.6	4.8	3.0	2.3	0.6	2.6	0.5	35.4
1994	21.5	4.8	3.0	2.4	0.6	2.7	0.5	35.5
1995	21.5	4.8	3.1	2.4	0.5	2.8	0.5	35.6
1996	21.4	4.9	3.1	2.5	0.5	2.9	0.6	35.9
1997	21.4	4.9	3.2	2.6	0.5	3.0	0.6	36.2
1998	21.3	4.9	3.2	2.6	0.5	3.1	0.6	36.2
1999	21.3	5.0	3.3	2.7	0.4	3.2	0.7	36.6

E—Estimate
Notes: Detail may not add to total because of independent rounding.

Source: FAA

FUEL USE FORECAST—

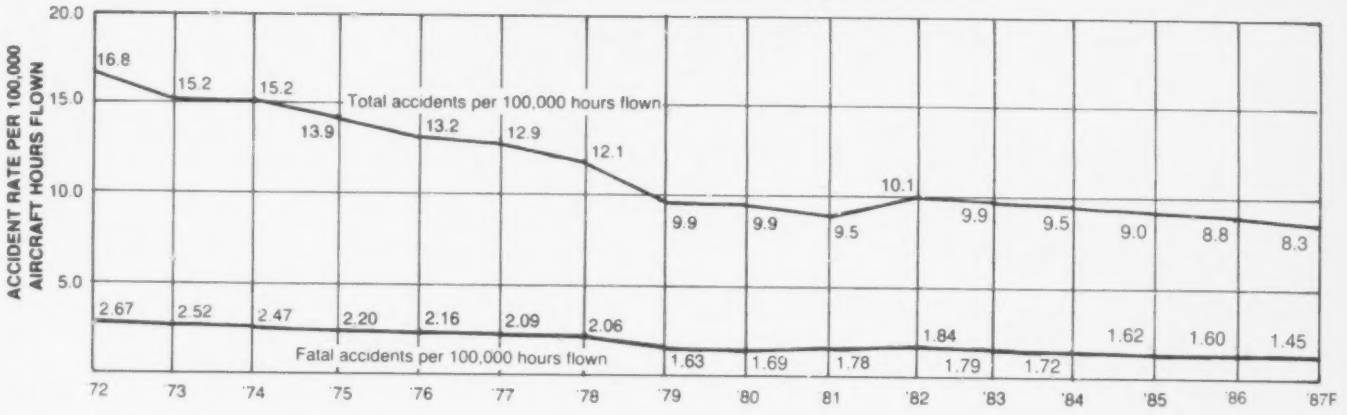
Estimated Fuel Consumed by General Aviation, by Type of Aircraft
(Millions of Gallons)

Fiscal Year	Fixed Wing				Rotocraft		Other	Total
	Piston							
	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine		
Historical								
1980	287.6	231.1	223.9	474.6	13.3	59.7	0.8	1,291.0
1981	276.5	206.1	219.6	483.2	13.3	57.8	0.8	1,257.3
1982	251.2	197.4	230.8	562.1	9.7	62.5	0.5	1,314.2
1983	235.1	189.3	230.9	396.2	7.8	54.2	0.4	1,113.9
1984	248.8	196.3	236.4	408.0	8.5	62.9	0.2	1,161.1
1985	249.4	178.4	210.2	433.2	8.7	58.9	0.1	1,138.9
1986	242.0	157.8	230.0	451.4	11.0	56.7	0.1	1,149.0
1987E	239.8	157.8	230.0	477.9	11.0	59.8	0.1	1,176.4
Forecast								
1988	237.6	154.6	238.6	504.5	11.0	59.8	0.1	1,206.2
1989	237.6	151.3	238.6	504.5	9.7	63.0	0.1	1,204.8
1990	236.5	151.3	238.6	531.0	9.7	69.3	0.1	1,236.5
1991	236.5	151.3	247.1	557.6	8.3	72.5	0.1	1,273.4
1992	235.4	151.3	247.1	584.1	8.3	78.8	0.1	1,305.1
1993	235.4	154.6	255.6	610.7	8.3	81.9	0.1	1,346.6
1994	234.3	154.6	255.6	637.2	8.3	85.1	0.1	1,375.2
1995	234.3	154.6	264.1	637.2	6.9	88.2	0.1	1,385.4
1996	233.3	157.8	264.1	663.8	6.9	91.4	0.2	1,417.5
1997	233.3	157.8	272.6	690.3	6.9	94.5	0.2	1,455.6
1998	233.3	157.8	272.6	690.3	6.9	97.7	0.3	1,458.9
1999	232.2	161.0	281.2	716.9	5.5	100.8	0.2	1,497.8

E = Estimate

Source: FAA

Accident Rates in U.S. General Aviation (1972—1987)



1987—Preliminary

Source—NTSB

General Aviation Fuel Consumption By Aircraft Type 1986

Aircraft	Mean Rate GPH	Estimated Fuel Use (mil gal)	Standard Error (mil gal)
Fixed Wing			
Piston			
1 Eng 1-3 Seats	9.88	83.67	3.4
1 Eng 4+ Seats	11.11	158.72	3.8
Total 1 Eng	10.69	242.39	5.1
2 Eng 1-6 Seats	26.95	75.83	4.4
2 Eng 7+ Seats	35.06	78.61	7.1
Total 2 Eng	30.22	154.45	8.4
Other Piston	79.28	0.86	0.6
Total Piston	**13.67**	**397.70**	**9.9**
Turboprop			
2 Eng 1-12 Seats	74.97	122.12	6.7
2 Eng 13+ Seats	106.62	111.37	11.8
Total 2 Eng	83.68	233.49	13.5
Other Turboprop	45.13	3.78	0.5
Total Turboprop	**82.22**	**237.27**	**13.5**
Turbojet			
2 Eng	238.40	373.43	20.8
Other	525.02	47.39	12.2
Total Turbojet	**255.89**	**420.82**	**24.1**
Total Fixed Wing	**26.72**	**1,055.80**	**29.3**
Rotorcraft			
Piston	14.36	11.34	1.7
Turbine	34.59	73.99	5.0
Total Rotorcraft	**28.24**	**85.32**	**5.3**
Other	3.71	0.44	0.1
Total Aircraft	**26.81**	**1,141.56**	**29.8**
Total Jet Fuel	109.88	732.08	28.1
Total Aviation Gasoline	13.68	409.48	10.0

Source: FAA

General Aviation Manufacturers Association

The General Aviation Manufacturers Association (GAMA)—a national trade association headquartered in Washington, D.C., represents 34 U.S. manufacturers of general aviation aircraft, engines, avionics, and related items.

Aeroquip Corporation
Aerospace Division
300 South East Avenue
Jackson, MI 49203
(517) 787-8121

Aire-Sciences, Inc.
216 Passaic Avenue
Fairfield, NJ 07006
(201) 228-1880

Aviation Simulation Technology, Inc.
Hanscom Field-East
Bedford, MA 01730
(617) 274-6600

Beech Aircraft Corporation
9709 East Central
Wichita, KS 67201-0085
(316) 681-7111

Bendix King
400 North Rogers Road
Olathe, KS 66061
(913) 782-0400

Century Flight Systems, Inc.
P.O. Box 610
Mineral Wells, TX 76067
(817) 325-2517

Cessna Aircraft Company
P.O. Box 7704
Wichita, KS 67277
(316) 946-7400

Champion Spark Plug Company
Aviation Products Group
P.O. Box 910
Toledo, OH 43661-0001
(419) 535-2461

Collins Avionics Group
Rockwell International
400 Collins Road NE
Cedar Rapids, IA 52498
(319) 395-1000

Fairchild Aircraft Corporation
P.O. Box 790490
San Antonio, TX 78279-0490
(512) 824-9421

FlightSafety International, Inc.
Marine Air Terminal
LaGuardia Airport
New York, NY 11371
(718) 565-4100

Garrett Corporation
Allied-Signal Aerospace Company
111 South 34th Street
Phoenix, AZ 85034
(602) 231-1000

Global-Wulfsberg Systems
Sundstrand Corporation
2144 Michelson Drive
Irvine, CA 92715
(714) 851-0119

BFGoodrich Company
Aerospace and Defense Division
250 N Cleveland-Massillon Road
Akron, OH 44313-0501
(216) 374-2000

Goodyear Tire and Rubber Company
Aviation Products Worldwide
1144 East Market Street
Akron, OH 44316
(216) 796-7600

Gulfstream Aerospace Corporation
P.O. Box 2206
Savannah, GA 31402
(912) 964-3000

Hartzell Propeller Inc.
1800 Covington Avenue
Piqua, OH 45356
(513) 778-4200

Honeywell, Inc
Sperry Commercial Flight Systems Group
P.O. Box 21111
Phoenix, AZ 85036
(602) 863-1030

Jeppesen Sanderson, Inc.
55 Inverness Drive East
Englewood, CO 80112
(303) 799-9090

Marathon Power Technologies
P.O. Box 8233
Waco, TX 76714
(817) 776-0650

Midland-Ross Corporation
Aerospace Group
4200 Surface Road
Columbus, OH 43228
(614) 276-3561

Pacific Scientific Corporation
Advanced Technology Group
1346 S. State College Blvd.
Anaheim, CA 92803
(714) 774-5217

Parker Hannifin Corporation
Parker Bertea Aerospace Group
18321 Jamboree Blvd.
Irvine, CA 92715
(714) 833-3000

Piper Aircraft Corporation
P.O. Box 1328
Vero Beach, FL 32961-1328
(305) 567-4361

Polymer Enterprises, Inc.
McCreary Tire and Rubber Company
1600 Washington St.
Indiana, PA 15701
(412) 349-9010

Precision Airmotive, Inc.
Snohomish County Airport
Everett, MA 98204
(206) 353-8181

Sabreliner Corporation
6161 Aviation Drive
St. Louis, MO 63134
(314) 731-2260

Singer Company
SimuFlite Training International Division
P.O. Box 619119
2929 Airfield Drive
Dallas Ft. Worth, TX 75261
(214) 456-8000

Teledyne Continental Motors
Aircraft Products Division
P.O. Box 90
Mobile, AL 36601
(205) 438-3411

Textron Lycoming
652 Oliver Street
Williamsport, PA 17701
(717) 327-7047

Unison Industries, Inc.
Slick Aircraft Products
530 Blackhawk Park Avenue
Rockford, IL 61104
(815) 965-4700

United Technologies Corporation
Pratt & Whitney Canada
1000 Marie-Victorin Blvd.
Lonqueuil, Quebec
Canada J4G 1A1
(514) 647-3770

Woodward Governor Company
Aircraft Controls Division
P.O. Box 7001
Rockford, IL 61125-7001
(815) 877-7441

Wyman-Gordon
105 Madison
Worcester, MA 01613
(617) 756-5111

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